

What is claimed is:

1. A support arm with automatic lock function, comprising:

a support chassis including a connecting cylinder, one end of said connecting cylinder provided at least one support wing, a first support axle hole and a second support axle hole provided on proper positions of said support wing;

a connecting seat including a connecting cylinder, one end of said connecting cylinder provided with at least one connecting wing, said connecting wing provided with a ramp block, a first connecting axle hole, a connecting arc slot being and a second connecting axle hole, said second connecting axle hole penetrated through said connecting wing and said ramp block, wherein the diameter of said second connecting axle hole is larger than the diameter of a fourth axle bolt;

a hang arm having a hollow cylinder, wherein a flange is provided on the inner surface of said hollow cylinder, at least one upper clamp disk and lower clamp disk provided separately at both ends of said hollow cylinder, said upper clamp disk being provided with a first upper clamp disk axle hole, a second clamp disk axle hole and a upper arc slot, said lower clamp disk provided with a first lower clamp disk axle hole and a lower arc slot; a spring device having at least a latch unit, an upper washer, a spring and a lower washer, wherein both of said upper washer and said lower washer are provided with an axle hole;

and;

a linked device comprising at least one upper connecting rod, lower connecting rod, upper connecting block, lower connecting block, screw bolt and ramp slider block, wherein said upper connecting rod is provided with a first upper connecting rod hole and a second upper connecting rod hole at both ends, and said lower connecting rod provided with a first lower connecting rod hole and a second lower connecting rod hole at both ends, one end of said upper connecting block provided with an upper side slot and an upper connecting axle hole and another end provided an upper connecting screw hole, one end of said lower connecting block provided with a lower side slot and a lower connecting axle hole, and another end provided a lower connecting screw hole, said ramp slider block provided with a slider axle hole and a side slot which is in accordance with the ramp block, wherein an upper bolt is plugged through said upper connecting axle hole and said first upper connecting rod hole to connect said upper connecting block and said upper connecting rod, a lower bolt plugged through said lower connecting axle hole and said first lower connecting rod hole to connect said lower connecting block and said lower connecting rod, wherein said screw bolt is able to penetrate through said lower washer, said spring and said upper washer, then said screw bolt is screwed by said latch unit against said upper washer in order to be

sleeved into said hollow cylinder of said hang arm, said lower washer lodged in said flange, said upper connecting block and said lower connecting block locked into both ends of said screw bolt to form a linked device, said spring device provided between said linked device and said hang arm, therefore said linked device, said spring device, and said hang arm assembled an arm set, said hang arm and said support seat being able to rotate relatively by plugging a first axle bolt through said first lower clamp disk axle hole and said first support axle hole, said hang arm and said connecting seat being able to rotate relatively by plugging a second axle bolt through said first upper clamp disk axle hole and said first connecting axle hole, said linked device and said hang arm being able to displace relatively when said linked device and said support seat rotating relatively by plugging a third axle bolt through said lower arc slot, said second support axle hole and said second lower connecting rod hole, said linked device and said hang arm being able to displace relatively when said linked device and said connecting seat rotating relatively by plugging a fourth axle bolt through said upper arc slot, said second connecting axle hole, said slider axle hole and said second upper connecting rod hole.

2. The support arm of claim 1, wherein said support cylinder of said support seat is plugged into a fixed seat.
3. The support arm of claim 1, wherein said connecting cylinder of said connecting seat is plugged into a platform.
4. The support arm of claim 1 further comprising a clamp bolt, wherein said clamp bolt is penetrated through said second upper clamp disk axle hole and said connecting arc slot, to improve the clamp force of said upper clamp disk when said support arm locked.
5. The support arm of claim 1 further comprising at least one disk fixed between each of said upper connecting rods, wherein said disk is provided with a first disk hole, a second disk hole and a disk arc slot for said second axle bolt to penetrate through said first disk hole, said fourth axle bolt to penetrate said disk through said disk arc slot, and clamp bolt to penetrate through said second disk hole.
6. The support arm of claim 1, wherein said connecting seat is replaced by at least one connecting frame, a first side of said connecting frame provided with a first left axle hole, a second left axle hole, a ramp block and a left arc slot, and a second side of said connecting frame provided with a first right axle hole and a second right axle hole,

such that said first side of said connecting frame is assembled with said arm set and said support seat to form a first support arm, and said second side of said connecting frame is assembled with another said arm set and said connecting set to form a second support arm.